

## ABSTRACT

A polarization splitting grating coupler (PSGC) connects an optical signal from an optical element, such as a fiber, to an optoelectronic integrated circuit. The PSGC separates a received optical signal into two orthogonal polarizations and directs the two polarizations to separate waveguides on an integrated circuit. Each of the two separated polarizations can then be processed, as needed for a particular application, by the integrated circuit. A PSGC can also operate in the reverse direction, and couple two optical signals from an integrated circuit to two respective orthogonal polarizations of one optical output signal sent off chip to an optical fiber.